Message

From: Strynar, Mark [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5A9910D5B38E471497BD875FD329A20A-STRYNAR, MARK]
Sent: 9/28/2020 5:41:16 PM
To: Delinsky, Amy [amy.delinsky@ncdenr.gov]; McCord, James [mccord.james@epa.gov]
Subject: RE: [External] RE: TFA in with early eluters

Hi Amy good to know. I had people in the pass poopoo on the idea of running HILIC on the same system I use to run our normal LC. I guess I could give it a try. I have a couple of HILIC columns in our arsenal now. I am not sure when I can get to it, but I have a desire and the column needed.

Mark

From: Delinsky, Amy <amy.delinsky@ncdenr.gov>
Sent: Monday, September 28, 2020 11:25 AM
To: Strynar, Mark <Strynar.Mark@epa.gov>; McCord, James <mccord.james@epa.gov>
Subject: RE: [External] RE: TFA in with early eluters

Hi Mark,

Thank you for the information. HILIC actually does not use very different solvents—the difference is essentially that MPA and MPB are switched. Increasing the amount of aqueous in mobile phase (rather than increasing the organic) causes elution of the analytes. I used acetonitrile (MPA) and aqueous ammonium formate (MPB). What is different that may need a different instrument is the following:

Different stationary phase column (I have used an amino column in the past, but there are many different ones now—they are not C18)

Increased re-equilibration time after each run (especially with gradient—often HILIC is actually a mixed retention combined with ion exchange)

Often difficult to run gradients with HILIC

Increased susceptibility to salts in sample with HILIC

Inability to analyze hydrophobic analytes normally run by C18

Yes, with the TFA I also do not know who has added it to their methods, but have heard that it is in samples. I am keeping an eye on it in methods with early eluters because these compounds have issues that may be compounded if they co elute with TFA, and it is very possible for them to co elute with TFA because they should have similar retention mechanisms.

Thanks,
Amy

From: Strynar, Mark <Strynar.Mark@epa.gov>
Sent: Monday, September 28, 2020 11:07 AM
To: Delinsky, Amy <amy.delinsky@ncdenr.gov>; McCord, James <mccord.james@epa.gov>
Subject: [External] RE: TFA in with early eluters

Hi Amy,

I am unsure if Chemours has included TFA. I am also unsure if they used HILIC. What I do know if the Cheours groundwater well samples I have looked at are absolutely loaded with TFA. Beyond the MS suppression it is also one of the calibration masses on our QTOF so we have that issue.

My opinion for the really small, mobile and diprotic PFAS is there needs to be an appropriate method developed to deal with them. HILIC sounds like a good approach, however I think that takes a dedicated piece of equipment as the solvents are very different correct?

Mark

From: Delinsky, Amy <amy.delinsky@ncdenr.gov>
Sent: Monday, September 28, 2020 9:06 AM
To: Strynar, Mark <Strynar.Mark@epa.gov>; McCord, James <mccord.james@epa.gov>
Subject: TFA in with early eluters

Hi Mark and James,

A few other questions related to the early eluters/diprotic compounds. Was TFA included in the mix of compounds analyzed by HILIC? If so, did it elute before, after, or in the middle of the other compounds? I am asking this because TFA by itself is a known ion suppressor in mass spectrometry and so I was wondering if it was resolved from the other early eluter/diprotic compounds.

Also, a long time ago I developed a HILIC method for haloacetic acids (DCA, TCA, and DFA as an internal standard)—this could be a starting point for TFA analysis, and may work for some of the other compounds (or at least give some ideas on how to approach the analytes).

Thanks,

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